[0062] After ablation and repositioning of the flap 64, a compression device or polymeric cylinder 88 can be applied to the external surface of the cornea, as seen in Fig. 22. The polymeric cylinder can be formed from any polymer and is preferably silicon, or a silicon sponge or any combination of silicon and other polymers. Cylinder 88 has a first end 90 and a second end 92. The end surface 94 adjacent second end 92 preferably has the shape that is substantially similar to the outer surface shape of lens 52. The cylinder 88 smoothes the inlay and the corneal flap by having gentle pressure applied thereto. Preferably, the pressure is slightly greater than the normal pressure required for suctioning the cornea top create a flap using a microkeratome as is known to one skilled in the art. However, the pressure can be any desired pressure that would effectively smoothen the flap, including normal intraocular eye pressure.

[0063] At the end of the procedure or before the ablation of the surface of the cornea, topical agents, such as an anti-inflammatory, antibiotics and/or an antiprolifrative agent, such as mitomycin or thiotepa, at very low concentrations can be used over the ablated area to prevent subsequent haze formation. The mitomycin concentration is preferably about 0.005-0.05% and more preferably about 0.02%. A short-term bandage contact lens 90 may also be used to protect the cornea, as seen in Fig. 23.

[0064] Furthermore, as seen in Figs. 24 and 25, a mark 92 such as "cross hairs" 92a (Fig. 24) or a dot 92b (Fig. 25) can be placed on the eye. This can be done using a laser or physically applying a mark 4 using a dye or any other desired substance. This mark can help in aligning the position in which a laser is to form the flap. Additionally, as seen in Figs. 6 and 7, a similar mark 92 may be made on surface 62, it is easier to align the mark on lens 52 with the area on the surface of the cornea where lens 52 will be placed. Furthermore, when using station 24 and robotic arm 16, the mark on the lens and/or on the lens and the dispensing device 22 can be aligned with mark 92 which would ensure an accurate placement of lens 52.

[0065] As more fully described in the above referenced applications, U.S. Application Serial No. 09/758,263 and U.S. Application Serial No. 09/797,177, the

exposed surface of the cornea, preferably the stroma can be ablated to further correct the refractive error in the eye for any condition such myopia, hyperopia or astigmatism. For example, the refractive error in the eye is measured using wavefront technology. A flap 18 is then formed in the surface of the cornea and a portion of the exposed surface is ablated, either concentric with the main optical axis or offset from the main optical axis can be ablated to correct the specific problem. As shown in Fig. 21, an implant or lens 120 can then be positioned as described above. Preferably implant 120 has predetermined refractive properties for myopic or hyperopic or astigmatic correction. Implant 120 can be substantially similar to implant 20 or implant 56 or any other desired shape. Furthermore, as seen in Fig. 22, lens 120 can be ablated in any manner desired to further correct myopic, hyperopic or astigmatic error in the eye, as described above.

[0066] Flap 18 can then be repositioned over the exposed surface and the implant 120 in a relaxed state, as shown in Fig. 23, and similar to the repositioning of the flap described above.

[0067] It is noted that lasers 18 and 20 and lens dispensing device 22 do not necessarily need to be on separate robotic arms and may be all on the same arm or any two devices on the same arm. In this configuration, a rotating device could be placed at the end of the robotic arm that would allow the surgeon to position the proper device in front of the patient's cornea and activate each device accordingly.

[0068] When correcting either the implant or ablating a portion of the stroma with the excimer laser, it is possible to simultaneously use wavefront technology or Adaptec optic technology to create a near perfect correction in the eye and to remove all corneal irregularities. By using this technique to correct vision, it is possible to achieve 20/10 vision in the patient's eye or better.

[0069] While preferred embodiments have been chosen to illustrate the invention, it will be understood by those skilled in the art that various changes and modifications can be made therein without departing from the scope of the invention as defined in the appended claims.